

***Baculum* sp. from Chiang Mai (PSG 153).**

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Note on classification by P.E. Bragg.

Key words

Phasmida, *Baculum*, colour variation, housing, rearing.

Classification

This species seems to belong to the genus *Baculum*, in the section which Brunner von Wattenwyl (1907) treated as the genus *Clitumnus*. His key to *Clitumnus* refers the female to *C. siamensis* Brunner and the description seems in agreement. However the male does not agree with Brunner's description, the fore femora in particular are much shorter (about 25% shorter) than indicated by Brunner. Assuming that Brunner has correctly associated his specimens, this species cannot be *C. siamensis*. Apart from using Brunner's key I have made no other attempt to identify this species. Almost 100 species of *Baculum* have been described (including 14 since 1907); many appear similar, particularly to general collectors, so there are likely to be many uncollected and undescribed species. This species may be undescribed.

Culture history

This *Baculum* sp. is to be found in the northern part of Thailand. Our culture stock originally came from the area around Chiang Mai. Some years ago a dealer imported specimens and eggs into Europe (van Gorkom, 1995). Unfortunately details like quantity, year, names, etc. are not known. Ulrich Ziegler distributed this species widely, he gave some eggs to me too.

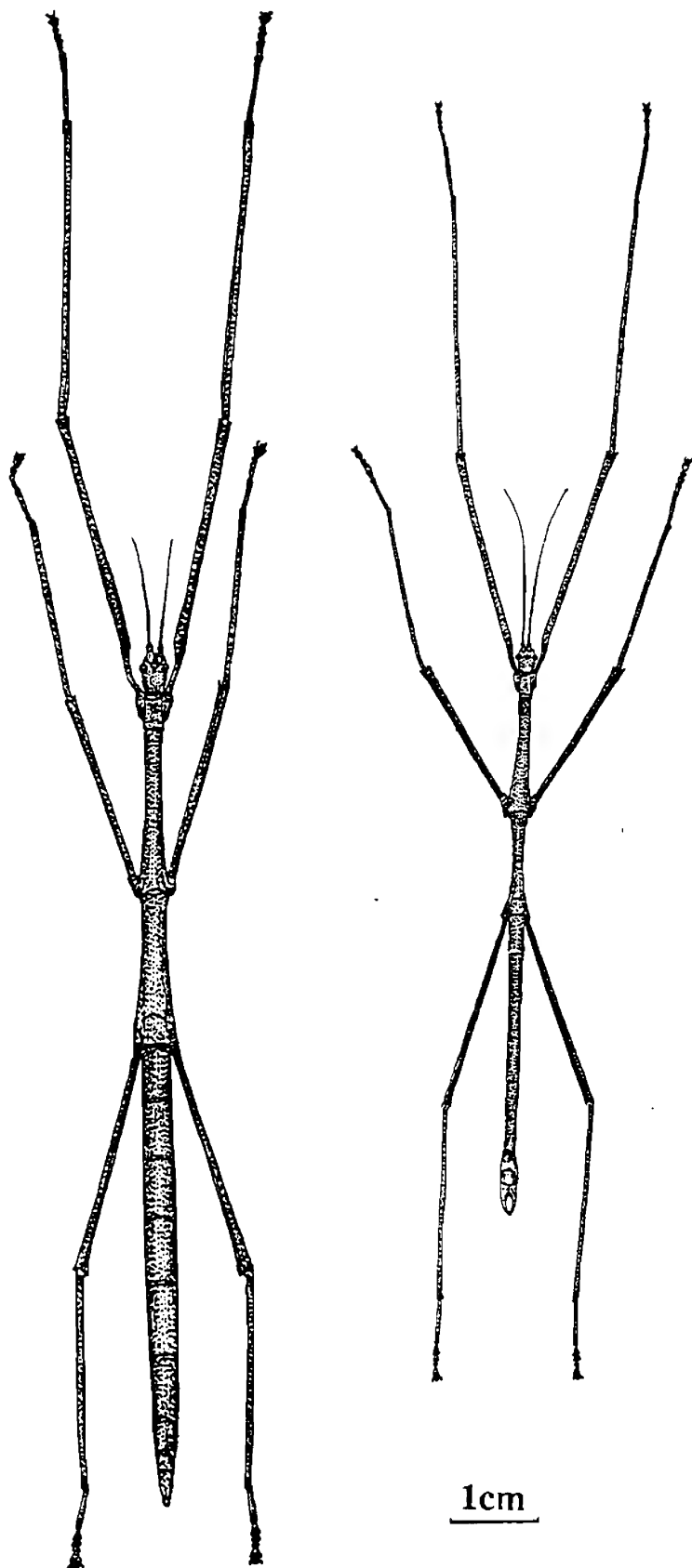
Females

The female has a smooth surface throughout. There are no spines or any other protuberances on the head, body or legs. The female has an ordinary cylindrical abdomen which ends in a point and is as wide as the thorax. Only the mesothorax becomes a bit thinner towards the middle. The cerci are small (figure 6). None of the legs have spines (except for a few on the underside of the apices of the middle and hind femora). Even the front femora are smooth. The antennae are about half as long as the front femora. The front femora have an indentation in which the head fits when the forelegs are folded against each other.

The table below gives the typical sizes of the adults.

Lengths (mm)	Male	Female
Body	85	120
Overall	200	225
Antennae	21	15
Front legs	92	97
Middle legs	58	59
Hind legs	70	75

The coloration can vary according to the rearing conditions. As explained by Bragg (1995: 4), the females are light brown dorsally and reddish ventrally when they are kept very dry and well ventilated. Under humid conditions the body colour is dark green dorsally and creamy-brown ventrally. The legs are always green. However, I have always had both colour variations together, so my conditions must have been between dry and humid. When this happens some choose the



Figures 1 & 2 Female and male PSG 153, *Baculum* sp.

"dry colours" while the others prefer the "humid colours". Almost two weeks after their final moult the females start laying eggs at an average rate of about two eggs a day. The female simply drops the eggs.

Males

The male also does not have any spines or other protuberances on the body or legs. The whole of the thorax and abdomen are smooth and are of uniform width except for the last three abdominal segments which are a bit thicker than the rest. The tenth abdominal segment is split into two large "claws" (claspers) which are pointed towards each other. The cerci are small and hidden under the claspers. The legs of the male are very smooth, thin, and long. The antennae are longer than those of the female but still shorter than the front femora.

Whatever the breeding conditions, the male is always between bronze and golden in colour, only the middle and hind femora are coloured differently, being green. The antennae are black. Males are very slender with very long legs (figure 2), so the shape is similar to the males of *B. thaili*. The male cerci are longer than those of the female, and hidden under the claw-shaped tenth abdominal segment (figure 7).

Copulation is not often seen, and usually does not take much time. Mating only takes place at night. The adults do not form permanent pairs.

Nymphs

The nymphs are very slender and fragile. Again they are very similar to *B. thaili*, although they are reddish in colour when they hatch (figure 3); after the first moult they become green. The nymphs easily lose legs. At normal room temperature they become adult within 4 or 5 months.

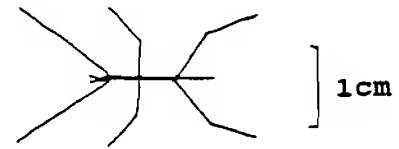
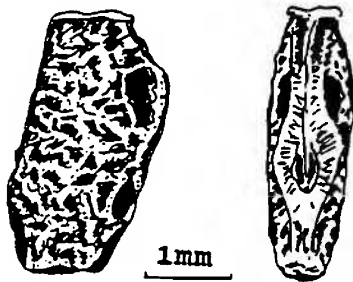


Figure 3 1st instar nymph.



Figures 4 & 5 Eggs: lateral and dorsal views.

Eggs

The eggs (figures 4 & 5) are similar to those of *B. thaili*, but smaller and with more markings. The egg is flat and has a very irregular surface, the whole surface is marked with small pits. On each side there are two larger pits near the micropylar plate. The micropylar plate is relatively small and oval, it ends indistinctly towards the operculum. The operculum is flat and there is no capitulum. The surface of the operculum is like the rest of the egg: irregular with many small pits. The colour is dark brown. The egg shell is relatively thin, so that they easily break when they are picked up. There is no capitulum on the operculum. The typical sizes are: length 3.5mm, height 1.7mm and width 1.0mm.

They are best incubated in a plastic box on a humid layer of peat, soil, sand or vermiculite (or a mixture of these). When kept this way at room temperature the nymphs hatch in 2-4 months. The percentage hatching is very high, being 90% or even more. When the eggs are kept dry (for some weeks or until they hatch), this percentage is a bit lower and the incubation period is longer. But when the time for hatching has come it is better to keep the eggs humid, otherwise some nymphs might fail to get all their legs out of the egg.

Foodplants

Both nymphs and adults are best fed on bramble and/or rose (they prefer wild rose), depending on your personal food supply. They also eat raspberry and pyracantha (Bragg, personal communication) although I have not tried these plants. I once tried to feed them oak, privet and ivy, but they refused to eat these three plants.

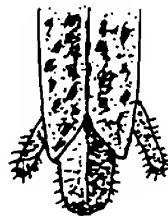


Figure 6
Apex of ♀ abdomen.



Figure 7
Apex of ♂ abdomen.

Housing

As they easily drop legs, this species should be kept in a large cage, the larger the better. I personally find a wooden cage with netting all around the best one for such species, so that the insects can easily climb; glass might be a difficulty for them. When the cage is too dry or too ventilated you can always use some plastic on the outside. It is better to make a door in the front, but leave a border of about 100mm at the top. This will help you cleaning out the cage, because when disturbed they always immediately climb upwards. Once in the cage at the top, they will refuse to walk down the 100mm border, so they just keep on wandering around at the ceiling. It

would not be very practical to choose a cage with a lid at the top, especially when there are a lot of nymphs in it!

Behaviour

Of course, like most stick insects, this species defends itself passively, i.e. by means of camouflage, but they also have active defence. Both nymphs and adults of this species are very nervous when disturbed. At the slightest disturbance in the air they start walking around. Once picked up, they often start panicking. When this happens, it is quite difficult to keep one on your hand; they just want to run away and/or fall down. This is easy to understand, because in nature falling down means disappearing from the predator. Cleaning out a cage full of nymphs of this *Baculum* sp. might cause you to panic, however they have to be handled carefully. When they fall down, they often stretch all their legs forward. This should be understood as a warning, although it is not you who may get in danger, but the insect itself: when touched in this attitude, they often simply throw away some legs, as if they have too many of them!

Comments

This species might be a nervous one, but still I have nice memories of it. The colours of the adults differ from the dull brown or green of most other *Baculum* spp. which are in culture. The nymphs are very colourful as are nymphs of three of the other *Baculum* spp. which are in culture from Vietnam (PSG 157, 158 and 159).

Acknowledgements

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References

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